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Indian Standard
SPECIFICATION FOR
VISCOSE RAYON CUT STAPLE
(SPUN) YARN

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Indian Standard
 SPECIFICATION FOR
 VISCOSE RAYON CUT STAPLE
 (SPUN) YARN

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(Continued on page 2)

(Continued from page 1)

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Indian Standard

**SPECIFICATION FOR
VISCOSE RAYON CUT STAPLE
(SPUN) YARN**

0. FOREWORD

0.1 This Indian Standard was adopted by the Indian Standards Institution on 11 May 1966, after the draft finalized by the Cotton, Yarn and Cloth Sectional Committee had been approved by the Textile Division Council.

0.2 The Government of India have decided to revert to the use of English cotton count system of yarn numbering in respect of the cotton textile industry. This standard, therefore, prescribes the count range in that system and the count-lea-strength product derived therefrom. Besides, it also prescribes the equivalents of English cotton count system in the universal count system, tex, and the yarn strength index (YSI) derived from it.

0.3 For the purpose of deciding whether a particular requirement of this standard is complied with, the final value, observed or calculated, expressing the result of a test, shall be rounded off in accordance with IS : 2-1960*. The number of significant places retained in the rounded off value should be the same as that of the specified value in this standard.

1. SCOPE

1.1 This standard prescribes count, count-lea-strength product (CSP) and yarn strength index (YSI) of viscose rayon cut staple (spun) yarn intended for use in powerlooms.

2. TERMINOLOGY

2.0 For the purpose of this standard, the following definitions shall apply.

2.1 Universal Count, in tex — A number indicating the weight in grams of one kilometre of yarn.

2.2 Yarn Strength Index (YSI) — A number obtained by dividing the breaking load in grams of a 100 metre skein of one metre circumference of yarn by its universal count in tex; abbreviated as YSI.

*Rules for rounding off numerical values (revised).

3. GENERAL REQUIREMENTS

3.1 The yarn shall be clean and evenly spun and shall be reasonably free from neps, snarls, slubs and other defects which affect its appearance and weavability.

3.1.1 All broken ends shall be properly pieced. There shall be no loose ends in hanks, cones or cheeses.

4. SPECIFIC REQUIREMENTS

4.1 The yarn of various counts shall conform to the requirements specified in Table 1. A tolerance of ± 5 percent in the count of yarn shall, however, be permissible.

TABLE 1 PARTICULARS OF COTTON COUNT (OR UNIVERSAL COUNT IN tex) AND COUNT-LEA-STRENGTH PRODUCT (CSP) OR YARN STRENGTH INDEX (YSI) OF VISCOSE RAYON CUT STAPLE (SPUN) YARN

COTTON COUNT (OR UNIVERSAL COUNT IN tex)	COUNT-LEA-STRENGTH PRODUCT (CSP) OR YARN STRENGTH INDEX* (YSI), Min
(1)	(2)
20s (or 30 tex)	1 700
30s (or 20 tex)	1 600
40s (or 15 tex)	1 500

*The yarn strength index is numerically equal to count-lea-strength product of yarn.

4.2 The cotton count of yarn shall be determined by the method prescribed in 4 to 8.1 of IS : 237-1951*.

4.2.1 The universal count of yarn in tex units shall be determined by the method prescribed in 4 to 8.3 of IS : 237-1951*.

4.3 The lea breaking load and the count-lea-strength product of yarn shall be determined by the method prescribed in 4 to 8.2 of IS : 239-1951†.

4.3.1 The yarn strength index of yarn shall be calculated according to 8.4 of IS : 1671-1960‡.

*Method for determination of cotton yarn count (or yarn melidity in tex).

†Method for determination of lea breaking load (strength) of cotton yarn and its count-lea-strength product.

‡Method for determination of skein breaking load (strength), tenacity and yarn strength index of cotton yarn (by constant-rate-of-traverse machine).

5. PACKING

5.1 The yarn shall be packed in accordance with the procedure laid down either in IS : 1347-1959* or in IS : 293-1959†, as required.

6. MARKING

6.1 Each bundle of yarn (in case of hanks) shall be marked with the following:

- a) Count of yarn (in cotton count and tex);
- b) Weight of bundle; and
- c) Name of the manufacturer, initials or trade-mark, if any.

6.2 The bale or case shall be marked with the following:

- a) Name of material;
- b) Count of yarn (in cotton count and tex);
- c) Gross weight of bale or case;
- d) Net weight of bale or case;
- e) Name of the manufacturer, initials or trade-mark, if any; and
- f) Any other information required by the buyer or by the law in force.

6.3 The bundle, bale or case may also be marked with the ISI Certification Mark.

NOTE — The use of the ISI Certification Mark is governed by the provisions of the Indian Standards Institution (Certification Marks) Act, and the Rules and Regulations made thereunder. Presence of this mark on products covered by an Indian Standard conveys the assurance that they have been produced to comply with the requirements of that standard, under a well-defined system of inspection, testing and quality control during production. This system, which is devised and supervised by ISI and operated by the producer, has the further safeguard that the products as actually marketed are continuously checked by ISI for conformity to the standard. Details of conditions, under which a licence for the use of the ISI Certification Mark may be granted to manufacturers or processors, may be obtained from the Indian Standards Institution.

7. SAMPLING

7.1 **Lot** — All the bales or cases of yarn of the same count and quality delivered to one buyer against one despatch note, shall constitute a lot.

7.2 The conformity of a lot to the requirements of this standard shall be determined on the basis of tests carried out on the yarn selected from the lot.

*Code for inland packaging of cotton cloth and yarn.

†Code for seaworthy packaging of cotton cloth and yarn (revised).

7.3 Unless otherwise agreed to between the buyer and the seller, the number of bales or cases to be selected at random from the lot, shall be in accordance with col 2 of Table 2.

TABLE 2 NUMBER OF BALES OR CASES TO BE SELECTED

LOT SIZE (BALES OR CASES)	NO. OF BALES OR CASES TO BE CHOSEN
(1)	(2)
1 and 2	All
3 to 8	3
9 „ 15	4
16 „ 25	5
26 „ 50	7
51 and above	10

7.3.1 In order to ensure randomness of selection of bales or cases, random number tables may be used.

NOTE — In case such tables are not available, the following procedure may be adopted:

Starting from any bale or case in the lot, the bales or cases in the lot shall be serially numbered as 1, 2, 3,...up to r , where r is the integral part of $\frac{N}{n}$ (N being the lot size and n the number of bales or cases to be selected). Every r th bale or case thus counted shall be removed until the requisite number is obtained.

7.4 From each bale or case, five bundles or packages shall be selected at random. In case the total number of packages so selected is less than 15, additional packages from the same lot shall be selected so as to make the total 15. From each bundle or package, only one test specimen shall be selected (discarding at least the first 50 m from the package) for each of the requirements mentioned in 4. The length of test specimen to be selected shall be 100 metres.

7.5 **Criteria for Conformity** — The lot shall be considered to be in conformity with the requirements of this standard if the number of bundles or packages failing to satisfy the requirements of any characteristic, does not exceed the corresponding number given in Table 3.

TABLE 3 CRITERIA FOR CONFORMITY*(Clause 7.5)***NUMBER OF BUNDLES OR
PACKAGES TESTED****PERMISSIBLE NUMBER OF
NON-CONFORMING
PACKAGES****(1)****(2)**

15

1

20

1

25

1

35

2

50

3

INTERNATIONAL SYSTEM OF UNITS (SI UNITS)

Base Units

Quantity	Unit	Symbol
Length	metre	m
Mass	kilogram	kg
Time	second	s
Electric current	ampere	A
Thermodynamic temperature	kelvin	K
Luminous intensity	candela	cd
Amount of substance	mole	mol

Supplementary Units

Quantity	Unit	Symbol
Plane angle	radian	rad
Solid angle	steradian	sr

Derived Units

Quantity	Unit	Symbol	Conversion
Force	newton	N	1 N = 1 kg.1 m/s ²
Energy	joule	J	1 J = 1 N.m
Power	watt	W	1 W = 1 J/s
Flux	weber	Wb	1 Wb = 1 V.s
Flux density	tesla	T	1 T = 1 Wb/m ²
Frequency	hertz	Hz	1 Hz = 1 c/s (s ⁻¹)
Electric conductance	siemens	S	1 S = 1 A/V
Pressure, stress	pascal	Pa	1 Pa = 1 N/m ²

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